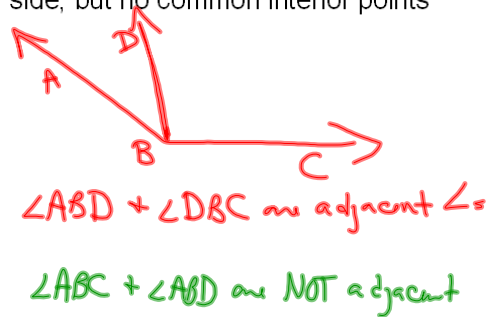
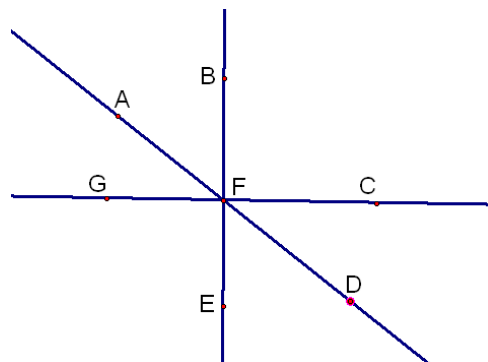
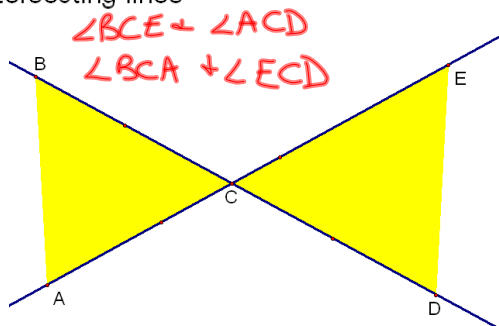


## 1.5 Describe Angle Pair Relationships

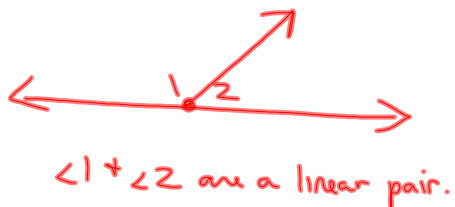
Adjacent angles—2  $\angle$ s that lie in the same plane, have a common vertex, and a common side, but no common interior points



Vertical angles—2 nonadjacent  $\angle$ s formed by intersecting lines



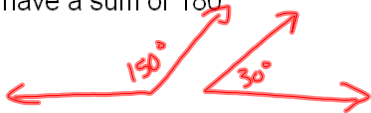
Linear pair—a pair of adjacent  $\angle$ s whose non-common sides are opposite rays



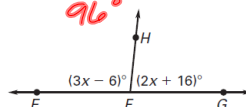
Complementary angles—2  $\angle$ s whose measures have a sum of  $90^\circ$



Supplementary angles—2  $\angle$ s whose measures have a sum of  $180^\circ$



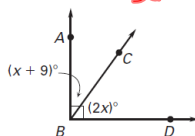
Find  $m\angle EFH$ .



$$3x - 6 + 2x + 16 = 180$$

$$x = 34$$

Find  $m\angle ABC$ .



$$2x + x + 9 = 90$$

$$x = 27$$

Solve for x and y.

$$6x + 17x + 19 = 180$$

$$x = 7$$

Example 1

An angle is  $6^\circ$  less than twice its complement.

Find the angles.

$$x + y = 90$$

$$x = 2y - 6$$

$$2y - 6 + y = 90$$

$$y = 32^\circ \quad x = 58^\circ$$

Example 2

An angle is  $44^\circ$  more than its supplement. Find the angles.

$$x + y = 180$$

$$x - 44 = y$$

$$68^\circ$$

$$112^\circ$$

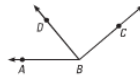
Example 3 Two angles are complementary.

An angle is 17 times as large as the other. Find the angles.

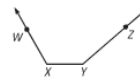
Hw  
p38-40  
#s3-9, 12, 13, 18, 19,  
20-28, 31,32

**IDENTIFYING ANGLES** Tell whether the indicated angles are adjacent.

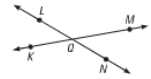
3.  $\angle ABD$  and  $\angle DBC$



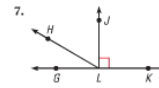
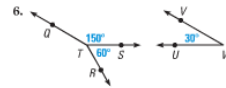
4.  $\angle WXY$  and  $\angle XYZ$



5.  $\angle LQM$  and  $\angle NQM$



**IDENTIFYING ANGLES** Name a pair of complementary angles and a pair of supplementary angles.



**COMPLEMENTARY ANGLES**  $\angle 1$  and  $\angle 2$  are complementary angles. Given the measure of  $\angle 1$ , find  $m\angle 2$ .

8.  $m\angle 1 = 43^\circ$

9.  $m\angle 1 = 21^\circ$

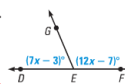
**SUPPLEMENTARY ANGLES**  $\angle 1$  and  $\angle 2$  are supplementary angles. Given the measure of  $\angle 1$ , find  $m\angle 2$ .

12.  $m\angle 1 = 60^\circ$

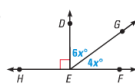
13.  $m\angle 1 = 155^\circ$

**ALGEBRA** Find  $m\angle DEG$  and  $m\angle GEF$ .

18.



19.



**IDENTIFYING ANGLE PAIRS** Use the diagram below. Tell whether the angles are vertical angles, a linear pair, or neither.

20.  $\angle 1$  and  $\angle 4$

21.  $\angle 1$  and  $\angle 2$

22.  $\angle 3$  and  $\angle 5$

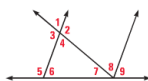
23.  $\angle 2$  and  $\angle 3$

24.  $\angle 7$ ,  $\angle 8$ , and  $\angle 9$

25.  $\angle 5$  and  $\angle 6$

26.  $\angle 6$  and  $\angle 7$

27.  $\angle 5$  and  $\angle 9$



28. **ALGEBRA** Two angles form a linear pair. The measure of one angle is 4 times the measure of the other angle. Find the measure of each angle.

**ALGEBRA** Find the values of  $x$  and  $y$ .

